

## **REMARKS/ARGUMENTS**

Reconsideration of the application is requested.

Claims 13 – 34 are now in the application. Claims 23, 24, and 25 have been amended. Claim 34 has been added.

More specifically, the added claim 34 largely corresponds to claim 13, but it further specifies the invention in its distinction between the PCB for the highly complex components and the PCB for the less complex components. The gist of the invention, of course, lies in the space distribution and space requirements of the components of the image-generation device. The primary objects of the invention – partially conflicting framework parameters – include assuring the relative rigidity of the optics modules, assuring good thermal behavior, distributing the components and modules in space-limited assemblies, and providing for easy installation.

Specification, p. 4, lines 25-29. Especially the superior heat conduction, but also the easy installation, are assured by the common metallic base plate. The space-limitation requirements are met by the distribution of various components on two (or more) PCBs, with the “large” components mounted on the second board, while the “small” semiconductor module is mounted on the first board.

Support for the added terminology in claim 34 is found Figs. 1 and 2 of the drawing, for instance, and at various positions in the specification. The metallic base plate, which may be flat (Figs. 1, 2) or bent at an angle between the two PCBs (Figs. 3, 4), supports the PCBs. The “complex semiconductors” with the optical image-recording

sensor project away from the PCB, as claimed, or from the metallic base plate with a height that is less than a height of the less complex components. The latter are conventional components such as capacitors which, due to physical restrictions cannot be miniaturized as can the integrated circuits of the complex components.

This brings us to the art rejection, in which claims 13-22 have been rejected as being obvious over Moriyama (US 6,414,388 B1) under 35 U.S.C. § 103. We respectfully traverse on the basis of the amended claims.

Moriyama deals with optical readers such as a CD or DVD pickup head. A metallic base plate has a first section on which a first chip 4 (i.e., a semiconductor) with a light receptor 3 is mounted, and a second section on which a second chip 7 with a light receptor 6 and a laser diode 5 is mounted. The second chip 7 is mounted on a raised plateau ("protruded section 2b") in order to assure that the "laser diode and [the monitoring] light receptor [are] disposed at a position higher than [the] first semiconductor substrate provided with [the] light receptor." Col. 1, lines 10-12.

In an alternative embodiment illustrated in Fig. 5, the first semiconductor substrate 4 is mounted in a depression 2c of the metallic plate. Again, the second chip 7 (i.e., its face with the laser diode 5 and the light receptor 6) is at a position higher than the first chip 4.

Moriyama does not have two or more printed circuit boards. Moriyama does not have a PCB for highly complex semiconductors and a PCB for less complex components.

Instead, the "radiator plate 2 is formed by a lead frame 8," col. 3, lines 35-36, and the chips are glued directly onto their respective support plateaus, as follows:

Next, Ag paste is coated on the flat plate section 2a and the protruded section 2b of the metallic radiator plate 2 by printing or the like. Then, after the first semiconductor substrate 4 is mounted on the flat plate section 2a, and the second semiconductor substrate 7 with the laser diode 5 die bonded thereto is mounted on the protruded section 2b, the first and second semiconductor substrates 4 and 7 are die bonded.

Col. 4, lines 17-24.

Subsequently, the chips are electrically connected to the lead frame 8 by bond wires 16. The lead frame 8 connects via the electrodes 11 to a circuit pattern 12 formed on the substrate 10. See, col. 4, lines 29 et seq.. The substrate 10, therefore, may be considered a printed circuit board. In other words, Moriyama provides two metallic plates supported on a single printed circuit board.

Claim 13 calls for a first printed circuit board, a second printed circuit board, and a metallic base plate. Claim 13, therefore, distinguishes over Moriyama. Furthermore, there is no suggestion in Moriyama, or in the art as a whole, to modify the reference teaching towards the claimed invention.

The indicated allowability of claims 23-33 is appreciatively noted. We agree with the Examiner that none of the references either show or render obvious the invention defined in these claims. Claims 23, 24, and 25 have been rewritten in independent form, by incorporating therein their respective base claim(s).

Counsel's payment in the amount of \$ 450.00 for two extra independent claims over three and one extra claim over twenty is being submitted concurrently with this paper. Please charge any shortfall in fees that may be due under Sections 1.16 and 1.17 to the Deposit Account of Lerner Greenberg Stermer LLP, No. 12-1099.

In summary, none of the references, whether taken alone or in any combination, either show or suggest the features of claims 13, 23, 24, 25, and/or 34. These claims are, therefore, patentable over the art and since all of the dependent claims are ultimately dependent thereon, they are patentable as well.

In view of the foregoing, reconsideration and allowance of claims 13-34 are solicited.

Respectfully submitted,

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